Patrick Deniso

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EDUCATION

Concordia University | Montreal, QC
Bachelor of Science in Computer Science | *Sept. 2021 – May 2025*
- **Teaching Assistant** for Principles of Programming Languages (C++, Python, Clojure, Erlang) in Fall 2022.

EXPERIENCE

Wealthsimple | Jan. 2024 – Apr. 2024
Software Engineer Intern - API Platforms | *Toronto, ON*
- **Reduced latency from 90ms to 20ms** and **enhanced system resilience** for the global activities feed by centralizing complex data and eliminating dependencies on other services. **Typescript, Postgraphile, GraphQL**.
- Led data backfill operations **(15M records)** and implemented dynamic upsert functions, ensuring seamless synchronization of historical and real-time account data. **Ruby on Rails, PostgreSQL.**
- Upgraded a high-traffic PostgreSQL database **(30M daily hits)** to a new major version in real time with zero downtime.
- Engineered a secure authenticator middleware for a high-traffic, read-intensive service **(10M daily hits)**, elevating front-end data integrity and operational efficiency.

National Bank Financial Markets | Sept. 2023 – Dec. 2023
Software Developer Intern - Fixed Income, Currency and Commodities | *Montreal, QC*
- **Cut loading times by 70%** for client data retrieval with advanced filter use, building a new application which boosted the FX sales team's efficiency in identifying high-value opportunities. Used **Angular, Python Quart, PostgreSQL**.
- Re-engineered the FICC structuring team's **($800M daily trading volume)** strategic analysis capabilities by building a sophisticated visualization platform, ensuring financial data accuracy and streamlining the decision-making process.
- **Reduced processing times by x10**, optimized data engineering processes via workflow orchestration with **Prefect**.

Intact Financial Corp. | May 2023 – Aug. 2023
Software Developer Intern - Data Feeds | *Montreal, QC*
- Architected and launched an event handler for real-time updates across insurance agencies, managing **thousands of broker records daily**. Built from scratch using **Spring, MongoDB, Kafka**. Robust testing with **JUnit, Mockito**.
- **Enhanced support efficiency by 30%** through the creation of an API replay endpoint, facilitating manual insurance transaction testing, aligning with existing project infrastructure.
- Led a strategic refactor using Clean Architecture principles, executed a substantial API migration, and enhanced code simplicity, achieving a **40% reduction in complexity**.
- Successfully **resolved 15+ complex bugs** during a critical release high-pressure phase, leveraging deep insights into code and architecture while collaborating with business analysts and QA engineers to enhance software quality.

ProgeSOFT Italia S.r.l | Oct. 2020 – Dec. 2020
Software Developer Intern | *Como, Italy*
- Developed automation scripts in **Python, C#** for web scraping potential new customers, and built a companion desktop app with a user-friendly UI. Enabled the sales department to leverage the tool, **boosting outreach by 50%**.
- Collaborated on a **Java** Android app, enabling the viewing of large CAD files, enhancing accessibility and efficiency.

PROJECTS

FastDB | *C++17*
- Designed and implemented a document-oriented database engine in modern C++, featuring efficient indexing, JSON-like storage, and custom query processing, demonstrating proficiency in data structures and optimization techniques.

Online Multiplayer Mobile Game | *C#, Unity Engine, PHP, MySQL*
- Online multiplayer top-down shooter game with efficient networking design, enabling smooth play even on slow connections. Featured room-based matchmaking and a stats-saving database, enhancing user experience.

E-sport Tournament Manager Bot | *Python, MySQL, Google APIs*
- Discord bot for managing large-scale **(100+ users)** tournaments, covering stats, rankings, sign-ups, and match lifecycle.

LEADERSHIP AND INVOLVEMENT

HackConcordia Tech Lead | *React, Express, MongoDB, TypeScript, Next.js* | May 2022 – Present
- Constructed and maintained HackConcordia and ConUHacks websites & infrastructure, serving **1000+ users**.

SAE Autoconnect Coordinator | *Python, Tensorflow, Jetson Nano* | Oct. 2021 – July 2022
- Spearheaded a 10+ students team in designing and developing unmanned land-based vehicles using Machine Learning.